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#### ABSTRACT OF THE DISCLOSURE

Methods are provided for producing apomictic plants from sexual plants divergent with respect to responses to different photoperiods and schedules of megasporogenesis and gametophyte development. A preferred system is to identify divergent lines from within a species or closely related group of species, accentuate the divergence by breeding where necessary, and produce artificial amphiploids that contain genomes from the apposing divergent lines. Apomixis results from the asynchronous expression of female developmental programs induced by combining the reproductively divergent lines. The procedures for manipulating the expression of apomixis described herein permit the development of true-breeding hybrids of various cultivated crops.

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